Claims

1. A system for current regulation of a light emitting diode, said system comprising:

a voltage source,

a light emitting diode electrically connected to said voltage source for supplying light to an area,

at least one field effect transistor electrically connected to said voltage source and said light emitting diode,

wherein said field effect transistor is a voltage driven component having an output current governed by a junction voltage of said field effect transistor.

2. The system for current regulation of a light emitting diode according to claim 1, wherein said junction voltage is made constant by connecting a gate and a source of said field effect transistor together.

3. The system for current regulation of a light emitting diode according to claim 1, wherein a resistor is electrically connected between said gate and said source to create a predetermined nonzero gate-source voltage.

4. The system for current regulation of a light emitting diode according to claim 1, wherein said gate and said source are electrically connected to create a substantially zero gate-source voltage.

5. The system for current regulation of a light emitting diode according to claim 1, wherein a current supplied to said light emitting diode is limited by a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

6. The system for current regulation of a light emitting diode according to claim 1, wherein said field effect transistor allows current to pass as long as said current is no greater than a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

7. The system for current regulation of a light emitting diode according to claim 1, wherein an average current delivered to said light emitting diode is proportional to a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

8. The system for current regulation of a light emitting diode according to claim 1, wherein said field effect transistor is disposed upstream of said light emitting diode.

9. The system for current regulation of a light emitting diode according to claim 1, wherein said field effect transistor is disposed downstream of said light emitting diode.

10. The system for current regulation of a light emitting diode according to claim 1, wherein an optional resistor may be electrically connected between said gate and said source.

11. The system for current regulation of a light emitting diode according to claim 1, wherein at least two field effect transistors are electrically connected to said voltage source and said light emitting diode.